

** CUSTOM PART * SO 124935*

Work Order ID 141291

141291

Wednesday, February 03, 2016 3:19:17 PM

Page 1

Item ID: D4961-041 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Tube Assembly
 Start Date: 2/3/2016 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 2/5/2016 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: *[Signature]* Date: *16.2.3* Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D4961	B

110		0.00							
110									
Small Fab									
Small Fab	<i>PTO</i> 								
	Memo	0.01							
	1- Cut D4961-1 tube to size as per dwg								
	2- On one side of tube flare end as per dwg then slide sleeves and nuts, flare other side of tube as per dwg.								

1 FF FEB 04 2016

120	QC5- Inspect part completeness to step on W/O	0.00							
120									
QC									
Quality Control	Memo	0.00							

① DAS 38 9-89 FEB 05 2016

130	Identify as per dwg & Stock Location: <i>Add</i>	0.00							
130									
Packaging									
Packaging	Memo	0.00							

IX DAS 28 9-89 FEB 05 2016

DQA:

Date: 16/07/08



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: 16/07/05

Work Order update only ☐

Work Order: 141291 Part No. D4961-041 NCR No. 16-5898		DISPOSITION Rework ☒ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Cross tube ☐ Water Jet ☐ Engineering ☒ Machining ☐ Small Fab ☐ Prod. Eng. Coord. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐							
Date: 16/2/3		Step #: 110		QTY Effective: 1			MRB (QSI042) Approval DAS 12 9-89 16/2/3				
Description Work Order Deviation				Disposition				Completed By DAS 12 9-89 16/2/3			
MPg the 0.25 shorter per customer request. Dim 7.88 is now 7.63.				Acceptable minor deviation to allow proper fit with elbow & swivel nut. Deviation restores restores intended fit of part.				Lead hand / Supervisor Approval Verification DAS 9 9-89 16-07-04			
Root Cause Environment ☐ No Re-verification ☐ Design ☒ Operator ☐ Doc/Data ☐ Offset/Set up ☐ Equip/Tooling ☐ Supplier ☐ Handling/Pre ☐ Training ☐ Material ☐ Use for Testing ☐ Internal Transport ☐ Poor Information ☐ Tribal Knowledge ☐ Rushing ☐ LOA ☐ Product Improvement ☐ Substation ☐ Process Improvement ☐ Past Expiry Date ☐ Manufacturing Process ☐ Misidentified ☐ Past Due ☐				FAULT CATEGORY Pressure/Forced ☐ Temperature/Cure ☐ Power Loss/Surge ☐ Positioned Wrong ☐ Bending ☐ Set-up ☐ Folio/Program ☐ Outside Dimensions ☐ Centre Not Concentric ☐ BOM/Route ☐ Grain ☐ Over/Under tolerance ☐ Cracks ☐ Broken/Damage/Defect ☐ Weld ☐ Part Incorrect ☐ Crimp/Kink/Ripple/Wave ☐ Inspection Incomplete/Unqualified ☐ Wrong Stock Pulled ☐ Part Lost/Missing ☐ Cuffs ☐ Contamination ☐ Out of Sequence ☐ Part Moved ☐ Crushing ☐ Countersink ☐ Off-set ☐ Drawing ☐ Heat Treat ☐ Cut Too Short ☐ Mislabeled ☐ Finish ☐ Wave/Twist in Tube ☐ Instructions Incomplete/Unclear ☐ Fit/Function ☐ Misread ☐ Marks/Chatter ☐ Drill Holes ☐ Misaligned/off center ☐ Turning Sequence ☐						OTHER: ☒ customer request	

Work Order ID 141291***141291***

Page 2

Item ID: D4961-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Tube Assembly

Stop ***NS2***

Start Date: 2/3/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 2/5/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.00

Quality Control

MC

FEB 05 2016

216-2-S

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐				
		OTHER : ☐							

Picklist Print

Wednesday, February 03, 2016 3:19:27 PM

Page 1

Work Order ID: 141291

141291

Parent Item: D4961-041

D4961-041

Parent Item Name: Tube Assembly

Start Date: 2/3/2016

Required Date: 2/5/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 13.10.22 NEW ISSUE DD VERF:JFS
REV:B 15.02.18 AS PER DWG REV.B DD VERF:JFS

IPP

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN818-L12J *AN818-L 12.J* Nut		Purchased	No			110	Each	14.0000	2	2	DAS 30 9-89		FEB 04 2016
									**				

Location	Loc Qty	Loc Code
CCK006	14	
m132803	14	

M304TR0.750W.049 *M304TR0 750W 049* 304 RD Tube .750 x .049W		Purchased	No			110	f	142.6059	0.7	0.736842			
									**				

FF Feb-04-2016

Location	Loc Qty	Loc Code
GA002	135.6331532	
M132270	0.00001	
M133131	0.0007242	
M133509	15.407579	
M133700	11.985	
M133914	34.37563	
M134138	73.86421	
MAT	6.9727347	
M133400	6.9727347	

0.737.

MS20819-12J *MS20819-12.J* Sleeve		Purchased	No			110	Each	23.0000	2	2	DAS 30 9-89		FEB 04 2016
									**				

Location	Loc Qty	Loc Code
ST305	23	
m133363	7	
m133790	6	
m134134	10	

2

DQA: _____ Date: _____



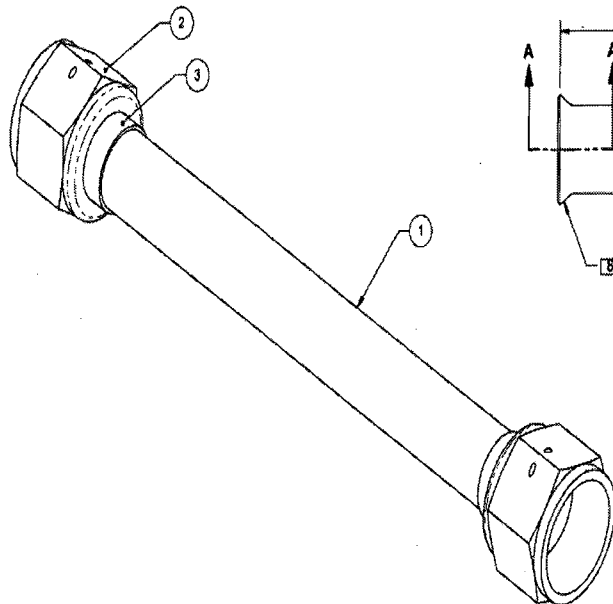
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

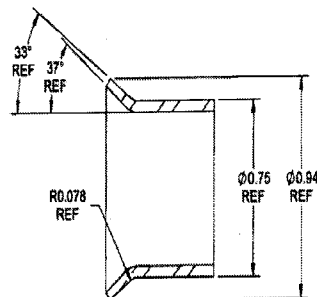
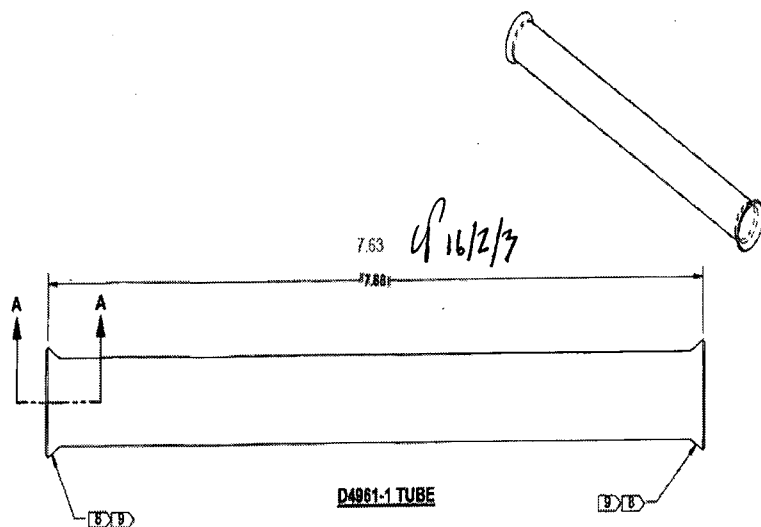
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

ITEM	QTY	P/N	DESCRIPTION
	X	D4961-041	TUBE ASSEMBLY
1	1	D4961-1	TUBE
2	2	AN818-L12J	NUT, TUBE COUPLING (DRILLED)
3	2	MS20819-12J	SLEEVE



D4961-041 TUBE ASSEMBLY



SECTION A-A

RELEASED

2015 APR 30

4/15/07

NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL SEAMLESS ROUND TUBING, Ø0.750 X 0.049 WALL
PER ASTM A213 OR ASME SA213 OR ASTM A269 (REF DART SPEC M304TR)
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.59 lbs
- 8) FLARE TUBE PER MS33584
- 9) CLEAN INSIDE OF TUBE AFTER FLARING ENDS

B	UPDATED BOM P/N AN818-L12J WAS AN818-12J. ADDED SHEET 2 (D4961-041)	AK	14.11.07
A	NEW ISSUE	VS	13.10.21
REV.	DESCRIPTION	BY	DATE
DESIGN	VS	DART AEROSPACE LTD HAMMERSBURY, ONTARIO, CANADA	
DRAWN	AK		
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	DD	D4961	SHEET 1 OF 2
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	TUBE ASSEMBLY	NTS
DATE	14.11.07	COPYRIGHT © 2013 BY DART AEROSPACE LTD NO REPRODUCTION OR TRANSMISSION IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD.	

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From: Mario Poulin
Sent: February-03-16 8:55 AM
To: Sian Willems <swillems@dartaero.com>
Cc: Marc Bellavance <mbellavance@dartaero.com>; Harvey Siemens <hsiemens@dartaero.com>
Subject: RE: Sent from Snipping Tool

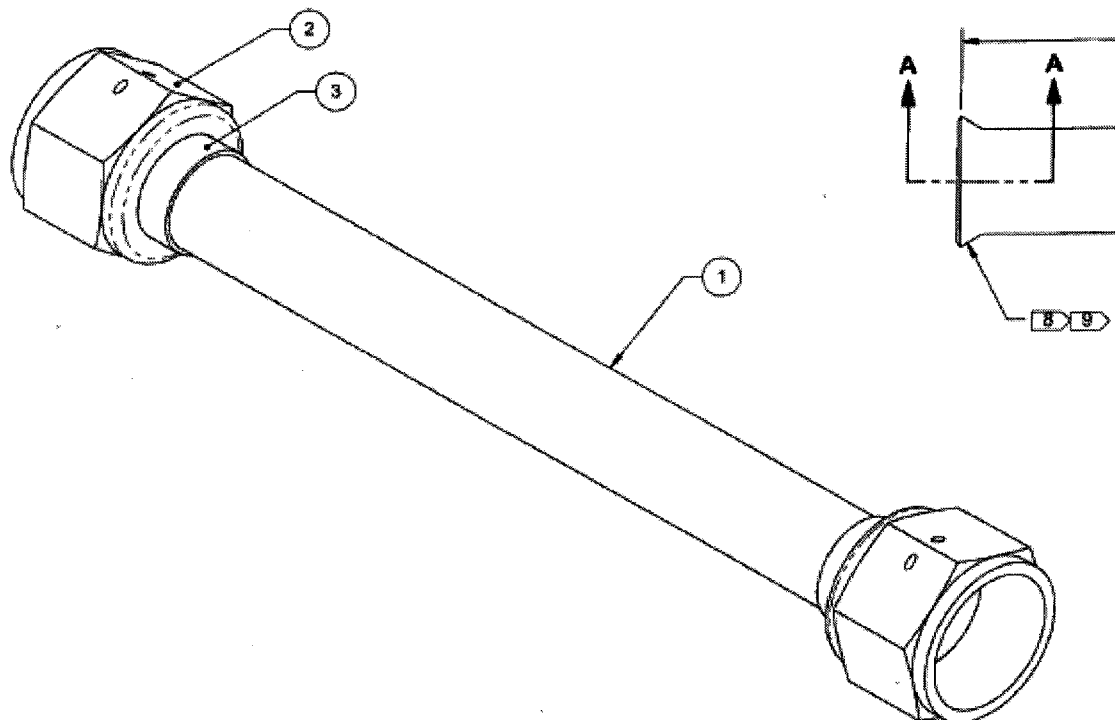
Hi Sian,

We have all the components, could be done in one day, would like to have a mark-up drawing from Eng if possible.

From: Sian Willems
Sent: Wednesday, February 03, 2016 10:00 AM
To: Mario Poulin <mpoulin@dartaero.com>
Cc: Marc Bellavance <mbellavance@dartaero.com>; Harvey Siemens <hsiemens@dartaero.com>
Subject: Sent from Snipping Tool

Hey Mario,

As discussed...how long to one of these, 0.25" shorter, on a deviated work order?



D4961-041 TUBE ASSEMBLY

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

